

VENTILATED GLASSES WITH A REMOVABLE PAD

BY

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CLAIMING FOREIGN PRIORITY

The applicant claims and requests a foreign priority, through the Paris Convention for the Protection of Industrial Property, based on a patent application filed in the Republic of Korea (South Korea) with the filing date of 10 July 26, 2001, with the application number 2001-22673, by the applicant. (See the Attached Declaration)

BACKGROUND

The present invention relates to sunglasses. More 15 particularly the present invention pertains to sunglasses that are worn by riders of motorcycles, bicycles, and other vehicles who experience strong winds blowing upon their face.

Some of the presently available glasses have various 20 types of added protection around the perimeter edge of the glasses that reduce the wind blowing upon the rider's face.

Unfortunately this extra protection on the glasses reduces the amount of air circulation on the back interior surface of the glasses near the face. The reduced air circulation 25 allows moisture to build up, which causes condensation and fogging on the back interior surface of the glasses. The

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condensation and fogging reduces the visibility of the rider. Bicycles and motorcycles can travel at relatively high speeds where adequate visibility is a great safety concern.

5        Devices, such as ski goggles, are designed to reduce wind effects upon the eyes and minimize the condensation buildup. Ski goggles are often made with an inner lens and an exterior lens that create a substantially enclosed chamber. The air in the chamber is warmed by the proximity  
10 to the face. The higher air temperature of the chamber in relation to the outside ambient temperature assists in reducing condensation buildup. Unfortunately, ski goggles tend to be too bulky for riders of cycles. Furthermore, the ski goggles are not an aesthetically appealing design shape  
15 for bicycle and motorcycle riders.

Therefore there is a need for sunglasses that have added protection around the edges of the glasses, which reduce the wind blowing upon the rider's face. Furthermore, the glasses should also have a source for reducing the  
20 condensation and fogging on the back interior surface of the glasses. The glasses should be lightweight and comfortable for the rider, while creating an appealing aesthetic image.

#### SUMMARY

25        An objective of the present invention is reducing the airflow impacting the rider's eyes. Motorcycles, bicycles, and other vehicles can travel at high speed, which creates

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significant airflow around the glasses into the eyes. The strong airflow around the perimeter of the glasses can cause significant watering of the eyes, which reduces visibility and affects safety. An advantage of the liner pad is

5 improved vision and comfort for the rider, due to the reduction in airflow impacting the eyes.

Another objective is providing adequate airflow through the glasses to counteract the build up of condensation upon the interior surface of the eyeglass frame. The reduction

10 of wind from around the perimeter of the glasses that contacts the interior surface must be compensated in some manner, in order to reduce condensation accumulation. Traveling on motorcycles and bicycles can be a strenuous activity. Perspiration often accumulates on the rider's

15 face, which vaporizes and collects on the glasses as condensation. Apertures are provided that allow a reduced airflow onto the interior surface. An advantage of the apertures is the reduction in condensation build up, which improves visibility and safety.

20 A further objective is easy attachment and removal of the protective liner pad from the eyeglass frame. Easily switching from just basic glasses to a ventilated glasses system with the pad is an important advantage. Removal of the inner frame and liner pad decreases the weight of the

25 glasses, which increase comfort. Also, some people consider the glasses more aesthetically appealing with the inner frame and pad removed. Detents are provided thus the inner

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frame with the protective pad is quickly reattached to the eyeglass frame when travel begins on the cycle. The detents are advantageous as they save time and frustration, while providing a quick method of attaching and detaching the  
5 inner frame from the eyeglass frame.

The ventilated glasses system includes a pad that serves as a liner for the inner frame. The pad reduces the air flowing into the eyes from around the perimeter edge of the glasses. A cavity with a partial air seal is formed by  
10 the person's face and the ventilated glasses system with pad. The partial air seal prevents any significant amount of airflow around the perimeter edges of the eyeglass frame. This lack of airflow could cause an accumulation of moisture and condensation within the cavity. Without adequate  
15 ventilation the condensation accumulates on the interior surface of the left lens and right lens, which obscures vision.

Apertures that form small holes are added to the eyeglass frame system to increase the airflow, thus reducing  
20 the condensation. The apertures are small enough to minimize the strength and speed of the airflow, yet still sufficient in size to allow a volume of air to flow through that will remove condensation from the interior surface.

An embodiment of the ventilated glasses system with a  
25 removable pad and detent includes an eyeglass frame with an exterior surface and an interior surface. The eyeglass frame has a left ear extension, a right ear extension, and a

nostril bridge support. The first aperture and the second aperture are located on the nostril bridge support, where condensation tends to be the most prevalent. Air can flow from the exterior surface to the interior surface through  
5 the first aperture and the second aperture.

The left lens and the right lens are attached to the eyeglass frame. The left lens and the right lens form a portion of the interior surface. Air flowing through the first aperture and the second aperture removes condensation  
10 from the interior surface, which dries the left lens and the right lens.

An inner frame is attached to the eyeglass frame with a detent. The detent includes a male portion and a female portion that accepts the male portion. The detent firmly  
15 secures the inner frame to the eyeglass frame. The inner frame has a pad that significantly reduces the wind from blowing on a person's eyes, while wearing the glasses. The pad is positioned on the back surface of the inner frame, so that the pad can compress against the person's face. The pad  
20 has a thickness 't' that is about one-quarter (.25) inch.

The inner frame contains a first track and a second track. The eyeglass frame has an associated first ridge and second ridge. The first track guides the first ridge and the second track guides the second ridge. The inner frame  
25 is guided into the proper alignment for attachment to the eyeglass frame.

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The eyeglass frame has a third aperture and a fourth aperture, which are similar in function to the first aperture and the second aperture. Air can flow through the third aperture and the fourth aperture thus removing  
5 condensation from the interior surface. The third aperture is located adjacent to the right ear extension and the fourth aperture is located adjacent to the left ear extension.

Although the present invention is briefly summarized, a  
10 fuller understanding of the invention can be obtained from the following drawings, detailed description and appended claims.

#### **BRIEF DESCRIPTION OF THE DRAWINGS**

15 These and other features, aspects and advantages of the present invention will become better understood with reference to the accompanying drawings, wherein:

Fig. 1 is an exploded perspective view of the eyeglass  
20 frame and inner frame.

Fig. 2 is a partial side view of the first track and first ridge.

25 Fig. 3 is a cutaway perspective view of the area around the nostril bridge support.

Fig. 4 is front view of the inner frame.

Fig. 5 is a back-side perspective view.

5 Fig. 6 is a bottom view with the inner frame attached to the eyeglass frame.

**DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS**

Referring to figs. 1 through 6, with particular  
10 reference to figs. 1 and 6, a ventilated glasses system 10 with a removable pad 12 and detent 14 includes an eyeglass frame 16 with an exterior surface 18 and an interior surface 20. The eyeglass frame 16 has a left ear extension 22, a right ear extension 24, and a nostril bridge support 26.  
15 The first aperture 28 and the second aperture 30 are located on the nostril bridge support 26, where condensation tends to be the most prevalent. Air can flow from the exterior surface 18 to the interior surface 20 through the first aperture 28 and the second aperture 30.  
20 The left lens 32 and the right lens 34 are attached to the eyeglass frame 16. The left lens 32 and the right lens 34 forms a portion of the interior surface 20. Air flowing through the first aperture 28 and the second aperture 30 removes condensation from the interior surface 20, which  
25 dries the left lens 32 and the right lens 34.

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Referring to figs. 4 and 5, the detents **14, 14'** include a male portion **38, 38'** and a female portion **40, 40'** that accepts the male portion **38, 38'**. The female portion **40, 40'** is an indentation located on the nostril bridge support **26**. The male portion **38, 38'** is a projection situated on the inner frame **36**. The detents **14, 14'** securely attach the inner frame **36** to the eyeglass frame **16**.

The nostril bridge support 26 is divided into a left side 42 and a right side 44. One detent 14 is located on and to the left side 42 of the nostril bridge support 26.

20 Another detent 14' is located on and to the right side 44 of the nostril bridge support 26. The female portion 40, 40' is located on the nostril bridge support 26. The male portion 38, 38' is positioned on the inner frame 36. The detent 14 is located adjacent to the first aperture 28,

while the detent **14'** is located adjacent to the second aperture **30**.

Referring to figs. 3, 4 and 6, the inner frame **36** has a pad **12** that significantly reduces the wind from blowing on a person's eyes, while wearing the glasses. The pad **12** is positioned on the back surface **46** of the inner frame **36**, so that the pad **12** can compress against the person's face. The pad **12** is foam or other soft pliable materials that are gentle and comfortable on the person's skin. The soft pliability of the foam allows the foam to conform to the shape of the person's face.

As shown in fig 6, the pad **12** has a thickness 't' that is between about one-sixteenth (1/16) inch and about one-half (1/2) inch. In a preferred embodiment the pad **12** has a thickness 't' that is about one-quarter (.25) inch. The first aperture **28** and the second aperture **30** function best when combined with the pad **12**. The pad **12** minimizes the airflow impacting the eyes from around the perimeter **48** of the ventilated glasses system **10**. The first aperture **28** and the second aperture **30** allow some reduced speed airflow to circulate upon the interior surface **20**. The reduced airflow is much gentler on the eyes, while still minimizing or eliminating accumulation of condensation.

Referring to fig. 1, 2, 4 and 5 the inner frame **36** contains a first track **50** and a second track **52**. The

eyeglass frame 16 has a corresponding first ridge 54 and second ridge 56. Fig. 2 is a close up view of the first track 50 and the first ridge 54. The first track 50 accepts the first ridge 54 and the second track 52 accepts the  
5 second ridge 56. The inner frame 36 is thus guided into the proper positional alignment during attachment to the eyeglass frame 16. In conjunction with the detents 14, 14' a secure connection is provided between the inner frame 36 and the eyeglass frame 16. The first ridge 54 and the  
10 second ridge 56 are on the interior surface 20. The first ridge 54 is shown in dotted lines, since it is obscured in the backside perspective view of fig. 5.

Referencing particularly figs. 2 and 4, the first track 50 has a first indent 66 that accepts a hinge protrusion 70.  
15 The hinge protrusion 70 is attached to the first ridge 54. Similarly, the second track 52 has a second indent 68 that accepts a hinge protrusion 70. A screw 72 projects through the center of the hinge protrusion 70.

Referring to figs. 1, 5 and 6, the eyeglass frame 16 is  
20 provided with a third aperture 58 and a fourth aperture 60 that are similar in function to the first aperture 28 and the second aperture 30. Air can flow through the third aperture 58 and the fourth aperture 60 thus removing condensation from the interior surface 20. The third  
25 aperture 58 is located adjacent to the left ear extension 22

and the fourth aperture **60** is located adjacent to the right ear extension **24**.

The eyeglass frame **16** also includes a fifth aperture **62** and a sixth aperture **64** that provide additional airflow from the exterior surface **18** to the interior surface **20**. The apertures are small in size to reduce the strength and speed of the airflow. Providing several apertures maintains sufficient airflow at a reduced speed to still remove condensation from the interior surface **20**. The condensation does not accumulate on the interior surface **20** thus visibility is preserved. The nostril bridge support **26** is divided into the left side **42** and the right side **44**. The first aperture **28** and fifth aperture **62** are positioned on the left side **42** of the nostril bridge support **26**. The second aperture **30** and sixth aperture **64** are positioned on the right side **44**. The first aperture **28** and fifth aperture remove condensation primarily from the left lens **32**, while second aperture **30** and sixth aperture **64** remove condensation primarily from the right lens **34**.

The left lens **32** and the right lens **34** are tinted for protection from the sun for the eyes. Although not shown, the ventilated glasses system can be provided with replacement lens. The left lens **32** or right lens **34** can be removed from the eyeglass frame **16**, then a replacement lens **32, 34** can be snapped into place.

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The ventilated glasses system 10 has several advantages. The strong airflow around the perimeter 48 of the ventilated glasses system 10 is significantly reduced by the pad 12. Irritation to the eyes is mitigated thus  
5 improving visibility and enhancing safety. Sufficient airflow is created by the addition of the apertures 28, 30 to reduce condensation upon the interior surface 20 of the eyeglass frame 16. The detents 14, 14' facilitate easy attachment and removal of the protective liner pad 12 from  
10 the eyeglass frame 16. Removal of the inner frame 36 and liner pad 12 when they are not desired, substantially decreases the weight of the glasses, thus increasing comfort for the person. The first track 50 is guided by the first ridge 54 so that the inner frame 36 is guided into the  
15 correct positional alignment with the eyeglass frame 16.

Although the present invention has been described in considerable detail with regard to the preferred versions thereof, other versions are possible. Therefore, the appended claims should not be limited to the descriptions of  
20 the preferred versions contained herein.